CLAIMS PENDING AFTER AMENDMENT

32. A compound having a structure selected from:

X—R—A—Q—$(Y)_n$, R—X—A—$(Y)_n$—Q, R—X—A—Q—$(Y)_n$, and X—R—A—$(Y)_n$—Q

wherein,

A is a nucleic acid chain comprising nucleic acid monomers selected from the group consisting of natural nucleic acids, modified nucleic acids and combinations thereof;

R is a molecular energy transfer donor;

Q is a molecular energy acceptor; and

X and Y are the same or different and are non-nucleic acid stabilizing moieties that interact to bring R and Q into operative proximity, thereby enabling transfer of energy from R to Q; and

n is 0 or 1.

33. The compound according to claim 32, wherein said molecular energy donor is a fluorophore.

34. The compound according to claim 32, wherein said molecular energy acceptor is a fluorescence quencher.

35. The compound according to claim 32, wherein X and Y are both hydrophobic moieties.

36. The compound according to claim 35, wherein X and Y are members independently selected from the group consisting of saturated hydrocarbons, unsaturated hydrocarbons, steroids, fatty acids, fatty alcohols and hydrophobic peptides.

37. The compound according to claim 32, wherein natural nucleic acids are members selected from the group consisting of deoxyribonucleotides, ribonucleotides and combinations thereof.

38. The compound according to claim 37, wherein said modified nucleic acids are peptide nucleic acids.

39. The compound according to claim 32, wherein said nucleic acid monomers are joined by linkages that are members independently selected from the group consisting phosphodiesters and modified phosphodiesters.

20. The compound according to claim 39, wherein said modified phosphodiesters are members selected from the group consisting of phosphorothioates and phosphoramidates.

41. The compound according to claim 32, wherein said nucleic acid sequence further comprises a hybridization enhancing moiety.

42. The compound according to claim 41, wherein said hybridization enhancing moiety is a member selected from the group consisting of intercalating agents, minor groove binders and modified exocyclic bases.

43. The compound according to claim 32, wherein X and Y are independently attached to members selected from the group consisting of a natural base of said nucleic acid chain, a modified base of said nucleic acid chain, a 3'-hydroxyl group of said nucleic acid chain, a 5'-hydroxyl group of said nucleic acid chain, a 2'-hydroxyl group of said nucleic acid chain, and a linkage joining nucleic acid groups in said nucleic acid chain.

44. The compound according to claim 32, wherein said compound is immobilized on a solid surface.

45. A method for amplifying a polynucleotide, wherein a compound according to claim 32 is a primer in said method, said method comprising:

(a) hybridizing said primer to said polynucleotide; and

(b) amplifying said polynucleotide.

46. The method according to claim 45, wherein said amplifying is a member selected from the group consisting of polymerase chain reaction (PCR), nucleic acid sequence based amplification (NASBA), strand displacement amplification (SDA) and combinations thereof.

47. A method for detecting or quantitating a nucleic acid, wherein the compound according to claim 32 is used as a probe, said method comprising:

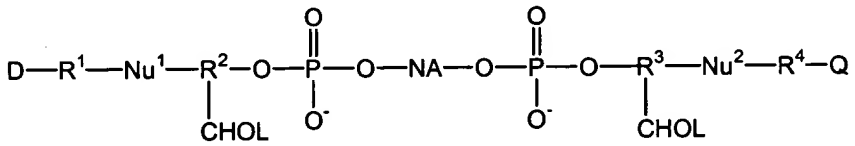
(a) hybridizing said compound to said nucleic acid; and

(b) detecting a change in fluorescence of said compound, thereby detecting or quantitating said nucleic acid .

48. The method according to claim 47, wherein said method comprises a member selected from the group consisting of 5'-nuclease assay, rolling circle amplification and combinations thereof.

49. A kit for quantitating nucleic acid, said kit comprising a compound according to claim 32.

50. A compound having the formula:



wherein,

CHOL is a cholesterol derivative;

R^1, R^2, R^3 and R^4 are linker moieties independently selected from the group consisting of substituted or unsubstituted alkyl and substituted or unsubstituted heteroalkyl;

Nu^1 and Nu^2 are members independently selected from the group consisting of nucleotide residues and nucleoside residues;

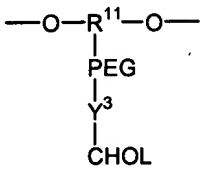
NA is a nucleic acid sequence;

D is a donor of light energy; and

Q is a quencher of light energy,

wherein each CHOL interacts with the other CHOL to bring D and Q into operative proximity, thereby enabling transfer of energy from D to Q.

51. The compound according to claim 50, wherein R^1 and R^2 are independently selected and have structures according to the formula:



wherein,

R^{11} is a member selected from the group consisting of substituted or unsubstituted alkyl and substituted or unsubstituted heteroalkyl;

PEG is polyethylene glycol;

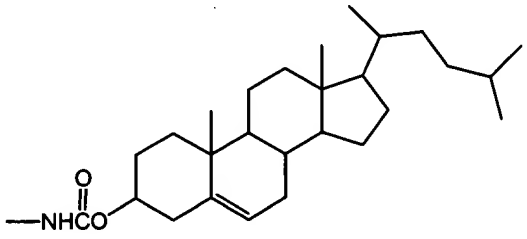
Y^3 is an organic functional group adjoining said PEG to said CHOL.

52. The compound according to claim 51, wherein said PEG has from about 2 to about 20 ethylene glycol subunits.

53. The compound according to claim 51 in which R^{11} is substituted or unsubstituted alkyl.

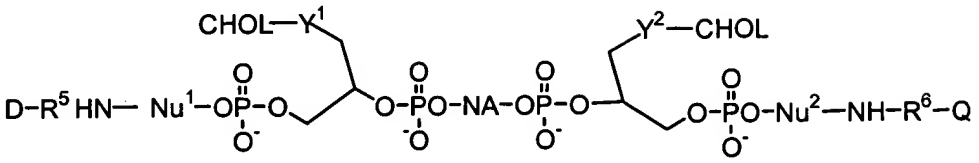
54. The compound according to claim 53, wherein R^{11} is C_1-C_6 substituted or unsubstituted alkyl.

55. The compound according to claim 51, wherein Y^3-CHOL has the structure:



56. The compound according to claim 50, wherein Nu^1 and Nu^2 are nucleotides having an exocyclic amine group to which $-R^1$-D and $-R^4Q$ are attached, respectively.

57. A compound having the structure:



wherein,

NA is a nucleic acid sequence;

Nu^1 and Nu^2 are members independently selected from the group consisting of nucleotide residues and nucleoside residues;

Y^1 and Y^2 are linking groups independently selected from the group consisting of substituted or unsubstituted alkyl and substituted or unsubstituted heteroalkyl;

R^5 and R^6 are linking groups independently selected from the group consisting of substituted or unsubstituted alkyl and substituted or unsubstituted heteroalkyl;

D is a donor of light energy; and

Q is a quencher of light energy,

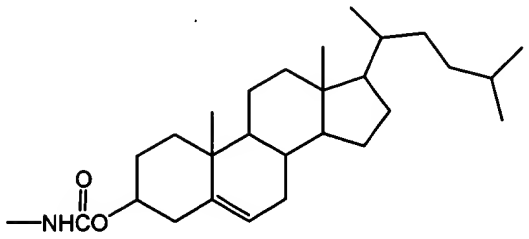
wherein each CHOL interacts with the other CHOL to bring D and Q into operative proximity, thereby enabling transfer of energy from D to Q.

58. The compound according to claim 57, wherein Y^1 and Y^2 are members independently selected from substituted or unsubstituted heteroalkyl.

59. The compound according to claim 58, wherein Y^1 and Y^2 are polyethylene glycol.

60. The compound according to claim 59, wherein said PEG has from about 2 to about 20 ethylene glycol subunits.

61. The compound according to claim 57, wherein Y^1-CHOL and Y^2-CHOL have the structure:



62. The compound according to claim 57, wherein Nu^1 and Nu^2 are nucleotides having an exocyclic amine group to which $-R^5$-D and $-R^6Q$ are attached, respectively.